

(1) GENERAL INDICATIONS:

(i) APPLICANT:

- (A) NAME: Deutsches Krebsforschungszentrum
- (B) STREET: Im Neuenheimer Feld 280
- (C) TOWN: Heidelberg
- (E) COUNTRY: Germany
- (F) POSTAL CODE: 69120

(ii) TITLE OF THE INVENTION: Modularly Constructed RNA Molecules Having Two Sequence Region Types

(iii) NUMBER OF SEQUENCES: 8

(iv) COMPUTER-READABLE VERSION:

- (A) DATA CARRIER: floppy disk
- (B) COMPUTER: IBM PC compatible
- (C) OPERATING SYSTEM: PC-DOS/MS-DOS
- (D) SOFTWARE: PatentIn Release #1.0, version #1.30 (EPO)

(v) DATA OF THE CURRENT APPLICATION: not yet known

(vi) DATA OF THE PRIOR APPLICATION:

APPLICATION NUMBER: DE 198 28 624.4
FILING DATE: June 26, 1998

(2) INDICATIONS AS TO ID NO: 1:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8422 base pairs
- (B) KIND: nucleotide
- (C) STRAND FORM: not known
- (D) TOPOLOGY: not known

(ii) KIND OF MOLECULE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

CTTAGAGTTT CGTGGCTTCA GGGTGGGAGT AGTTGGAGCA TTGGGGATGT TTTTCTTACC	60
GACAAGCACA GTCAGGTTGA AGACCTAACCC AGGGCCAGAA GTAGCTTGC ACTTTCTAA	120
ACTAGGCTCC TTCAACAAGG CTTGCTGCAG ATACTACTGA CCAGACAAGC TGTTGACCAG	180
GCACCTCCCC TCCCGCCAA ACCTTTCCCC CATGTGGTCG TTAGAGACAG AGCGACAGAG	240
CAGTTGAGAG GACACTCCCG TTTTCGGTGC CATCAGTGCC CCGTCTACAG CTCCCCCAGC	300
TCCCCCCACC TCCCCCACTC CCAACCACGT TGGGACAGGG AGGTGTGAGG CAGGAGAGAC	360
AGTTGGATTC TTTAGAGAAG ATGGATATGA CCAGTGGCTA TGGCCTGTGC GATCCCACCC	420
GTGGTGGCTC AAGTCTGGCC CCACACCAGC CCCAATCCAA AACTGGCAAG GACGCTTCAC	480
AGGACAGGAA AGTGGCACCT GTCTGCTCCA GCTCTGGCAT GGCTAGGAGG GGGGAGTCCC	540
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CATGGTCCAT TCTCAAGGGA CGTCCTCCAA CGGGTGGCGC TAGAGGCCAT GGAGGCAGTA	660

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GGATTCCCAA TCACTCAGAG CAGTCTGTGA CTTAGTGGAC AGGGGAGGGG GCAAAGGGGG	780
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ATTTGCACTA TTGAGTCTTC ATGTTCCCAC TTCAAAACAA ACAGATGCTC TGAGAGCAAA	900
CTGGCTTGAA TTGGTGACAT TTAGTCCCTC AAGCCACCAG ATGTGACAGT GTTGAGAACT	960
ACCTGGATT GTATATATAC CTGCGCTTGT TTTAAAGTGG GCTCAGCACA TAGGGTTCCC	1020
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TCTTCTCCCC TTCCATTCT GCCTTTGTT CATTCATCC TTTCACTTCT TTCCCTTCCT	1140
CCGTCCCTCCT CCTTCCTAGT TCATCCCTTC TCTTCCAGGC AGCCGCGGTG CCCAACACACA	1200
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TGTGGCCTGC CAGTCATCGA GTGGCCCAAC AGGGGCTCCA TGCCAGCCGA CCTTGACCTC	1560
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GAACACCACA CATTTCACTG TCTGTCTGGT CCATAGCTGT GGTGTAGGGG CTTAGAGGCA	1800
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GCAAATGAGA CAGCAGTCTT ATGCTTCCAG AAACACCCAC AGGCATGTCC CATGTGAGCT	2040
GCTGCCATGA ACTGTCAAGT GTGTGTTGTC TTGTGTATTT CAGTTATTGT CCTGGCTTC	2100
CTTACTATGG TGTAATCATG AAGGAGTGAA ACATCATAGA AACTGTCTAG CACTCCCTG	2160
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TGATGACCCC CCCAGCTTCA CTTCTGACTC TTCCCCAGGA AGGGAAGGGG GGTCAGAAGA	2460
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TCGGGCCCCA CCTGCAGCTC CCTCAAAGAG GCAGTTGCC AGCCTCTTC CCTTCCAGTT	2880
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CCTAGACTTC AGGGAGTCAG CTGTTCTAG AGTTCTTACCC ATGGAGTGGG TCTGGAGGAC	4200
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CTCTGCTCGC	CTCGGATCAG	CTGAGCCTTC	TGAGCTGGCC	TCTCACTGCC	TCCCCAAGGC	4860
CCCCTGCCTG	CCCTGTCAGG	AGGCAGAAGG	AAGCAGGTGT	GAGGGCAGTG	CAAGGAGGGA	4920
GCACAACCCC	CAGCTCCCAG	TCCGGGCTCC	GACTTGTGCA	CAGGCAGAGC	CCAGACCCCTG	4980
GAGGAAATCC	TACCTTGAA	TTCAAGAAC	TTTGGGAAAT	TTGGAAATCT	CTTTGCC	5040
AAACCCCCAT	TCTGTCCTAC	CTTTAAC	TAG	GTCCTGCTCA	GCAGTGAGAG	5100
GAAAAGGCCA	AGAGGTTTGG	CTCCTGCCA	CTGATAGCCC	CTCTCCCCGC	AGTGTGTTGTG	5160
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CTGCTGGTCA	CTTCTTCTGT	CCAAGCAGAT	TCGTGGTCTT	TTCTCGCTT	CTTTCAAGGG	5580
CTTCCCTGTG	CCAGGTGAAG	GAGGCTCCAG	GCAGCACCCA	GGTTTTGCAC	TCTTGT	5640
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GGCAGAGGAG	GCGAGGAGGC	CGTTGCCGCT	GATGTTGGC	CGTGAACAGG	TGGGTGTCTG	6480
CGTGCCTCCA	CGTGCCTGTT	TTCTGACTGA	CATGAAATCG	ACGCCCGAGT	TAGCCTCACC	6540
CGGTGACCTC	TAGCCCTGCC	CGGATGGAGC	GGGGCCACC	CGGTTCAAGTG	TTTCTGGGGA	6600
GCTGGACAGT	GGAGTGCAAA	AGGCTTGCA	AACTTGAGC	CTGCTCCTTC	CCTTGCTACC	6660
ACGGCCTCCT	TTCCGTTTGA	TTTGTCACTG	CTTCAATCAA	TAACAGCCGC	TCCAGAGTC	6720
GTAGTCAATG	AATATATGAC	CAAATATCAC	CAGGACTGTT	ACTCAATGTG	TGCCGAGCCC	6780

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GGTTTTTATT	TCTCCTTTG	TGTTCCAAAC	ATGAGGTTCT	CTCTACTGGT	CCTCTTAACT	6960	
GTGGTGTGA	GGCTTATATT	TGTGTAATT	TTGGTGGGTG	AAAGGAATT	TGCTAAGTAA	7020	
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TTGCCACTT	CCAAGTCACT	GCAAAACCAG	GT	TTGTTCC	GCCCAGTGG	TTCTTGT	7320
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GGTGTGCCCC	GTGGCATT	CTGTTAAGA	CACTTCCG	ACATCCCACC	CCATCCTCCA	7620	
GGGCTCAACA	CTGTGACATC	TCTATTCCCC	ACCC	TCCCAGGGCA	ATAAAATGAC	7680	
CATGGAGGGG	GCTTGCACTC	TCTTGGCTGT	CACCCGATCG	CCAGCAAAAC	TTAGATGTG	7740	
GAAAACCCCT	TCCCATTCCA	TGGCGAAAAC	ATCTCCTTAG	AAAAGCCATT	ACCCTCATT	7800	
GGCATGGTTT	TGGGCTCCC	AAACACCTGA	CAGCCCCTCC	CTCCTCTGAG	AGGCGGAGAG	7860	
TGCTGACTGT	AGTGACCATT	GCATGCC	TGCAGC	GGAAAGAGCTA	GGCAGGGTGT	7920	
CTGCC	CTGAGTTGAA	GTCATGCTCC	CCTGTGCCAG	CCCAGAGGCC	GAGAGCTATG	7980	
GACAGCATTG	CCAGTAACAC	AGGCCACCC	GTG	CAGAAGG	GAGCTGGCTC	CAGCCTGGAA	8040
ACCTGTC	GA	GGTGGGAGA	GGTGC	ACTTG	GGGCACAGGG	AGAGGCCGGG	8100
CTGGAGATGT	CTCTAAAGC	CCTGTATCGT	ATT	CACCTTC	AGTTTTGTG	TTTTGGGACA	8160
ATTACTTTAG	AAAATAAGTA	GGTCGTTTA	AAAACAAAAA	TTATTGATTG	CTTTTTGTA	8220	
GTGTTCA	AAAAGGTTCT	TTGTGTATAG	CCAAATGACT	GAAAGCACTG	ATATATTAA	8280	
AAACAAAGG	CAATTATTA	AGGAAATTG	TACCA	TTCA	GTAAACCTGT	CTGAATGTAC	8340
CTGTATACGT	TTCAAAAACA	CCCCCCCC	ACTGAATCCC	TGTAACCTAT	TTATTATATA	8400	
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(2) INDICATIONS AS TO ID NO: 2:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 8464 amino acids
 - (B) KIND: nucleotide
 - (C) STRAND FORM: not known
 - (D) TOPOLOGY: not known

(ii) KIND OF MOLECULE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

CTTAGAGTTT	CGTGGCTTCG	GGGTGGGAGT	AGTGGAGCA	TTGGGATGTT	TTTCTTACCG	60
ACAAGCACAG	TCAGGTTGAA	GACCTAACCA	GGGCCAGAAG	TAGCTTGCA	CTTTCTAAA	120
CTAGGCTCCT	TCAACAAGGC	TTGCTGCAGA	TACTACTGAC	CAGACAAGCT	GTTGACCAGG	180
CACTCCCCCC	AACAATATCC	TCCCTCTTCC	CCCCCCAC	CCCCGCCCG	TGTGCTCGTT	240
AGGGCAATTG	AAAGGACACT	CCCATTTTG	GTGCCATTGA	TGCCCTGTCC	ATAATAGCTT	300
CCCTGACTTT	TACACCACCC	CAACTCCAA	TCTGAAGGAC	TGGGAGGTGT	GATGCAGGAG	360
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CCAACTGTGG	TAGCACAGAT	CTGGCTCCAC	ATCAACCCAA	TCCAAAACGT	ACAAGGATAT	480
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TCATCATCTG	TTCACAAGGC	ATGCTCCCT	AGAAGATAAT	GCTAAAGAGG	TGCCATGGAG	660
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CTTCAAAACA	AACAGATGCT	CTGAAAGCAA	ACTGGCTTGA	AATGGTGACA	CTGTCCCACA	900
AGCCACCAGA	CATGGCAGTG	TTCAGAACTA	CCTGTATCTG	TATATACCTG	CGCTTGTTTT	960
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TTGAGCCCTC	CCTAACCTCT	GTGAAGAAGA	ACAAGAAGGT	AGGAAGCTCT	TGCTCTTGCT	1320
AAGAAAATG	TCAAAAGGCT	TTCAGACCTT	AAACAATGAG	CCTTTTCACC	TTTTACTCTA	1380
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TACTCAGAAA	TCTAATGTCA	TACTTAGTGT	GGGCAGGGGA	CCTGTCAGGA	CAGATGCAGA	1560
CCTAACGCAGG	GAGTGACACC	AGGGCCCTTG	GCCCTTCTTC	TGACAAACAT	ACACATCCCA	1620
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ATCCCATATT	TCAAAACTCTG	CTCCATAAGT	ACAGTGGTGA	ATTTTATAGA	CTTGACTTTG	1740
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GAAGTCCTTA	TCTAGCTGCA	TATCTTCATC	ATATTGGTAT	ATCCTTTCT	GTGTTTACAG	1860

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CAGCAGTCTT ATGCTTCCAG AAACACCCAC AGGCACGTCC CATGTGAGCT GCTGCCATGA	1980
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GTCCTTCTGA ACTCCTGCTT CTTCCAGTGA CAAAAGGCC CTAUTGCCCC ACCCCAAACCT	2460
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CAGGTGGTGG TAACTGCAGC TTCTTAGGGT TTTCTTCACT TCTTGCTTCT TTCCCCATTG	2820
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TCTGACAATG ATAAAACAAG GCAGTAACCT AAAACAGACT GCCAGGTTTG GCAGAGAAAG	3600
GAAATTCCCTT AGCTGACAGC ACCTCTGGAT TTTAAATAGG TTGTAATAAG TGGCTCAAAC	3660
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TACTATATAG	AAAAGGCTTA	GTCTAATTGT	TATAAATTGC	TAGAATACTG	CCTCCCCAG	4200
GGTCTAAAAA	TATATGCTAA	AGGGGAAAAC	TTGAACACTG	AAACCAGTTC	TGAACAATT	4260
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CAGAAACTAC	TTCTGACCTT	GTCATTGGA	ATGGAGGTTA	GTGGTCTGCC	AGATGCCAA	4560
GCTGCATGAG	ACCAGCTCTT	GGTTTATCAA	TTTGAACACT	CAGTAACCTA	GAAGGCCAG	4620
CACAAAGTGT	CTGCTCTCTT	CTTAACTGAG	CCTGCCAG	CACTACTGCA	CAAATTAGGG	4680
AGGGTCTACT	TCCTACAGAG	CATCCCTCCC	TGGGCCCCCT	CCCATCCTTT	GTACTCTACC	4740
TACCTGACCT	TCAGGATCTT	GGCACATACG	AAATGGCTGT	GTAGCAAGCA	CTTTGGCATG	4800
CCCTCCTAAA	CTTACCCAG	AGCCTCTCCC	TGCCTCCTTA	AGCCAGTCTG	CCTGTCTTCT	4860
GGGGAGGTGT	TAGAGCCAT	AGAATGGAGA	GGAGAAAGAA	AAGAGGAAGA	GGCAGGCAGG	4920
TAGTAAAAAG	GCTCTGGGAG	GAAAGACAGC	CTCCTAGGCT	TTGCACAAGC	AGGACTCAGC	4980
CCCTTGTGGG	AACTAAGTGC	CATCTTGGAG	TTAAGAACAA	TTTGGACAAG	TTGCAAATGA	5040
CCTTTGCTCC	TTGCTCCTCT	CACCTTTAT	GGGGCCCTGC	TTAGCACTGA	AAGCAAATGC	5100
GCTGAAAAGG	CAAAGAGGTT	TGGCTCCTGC	CCACTGATAG	TCCTTCCCT	GCAGTGTGTTG	5160
TGTGTCAAGT	GGCAAAGCTG	TTCTTCCTGG	TGACTCTGAT	TAGATCCAGT	AACTTAAGAG	5220
ATTTGTATGC	ATAGGTCTGC	TTTGACTCTT	CTATTCTGGG	CTTTGATTT	GTTTTTCAGT	5280
TTTGCTTTA	GTTTTCCTAT	TTTTATTTA	TGCACCAACT	AGACACACAA	AGCAGTTGAA	5340
TTTATATATA	TATATATATA	TATATATCTG	TATATTCAC	AATTATAAAC	TCATTTGCT	5400
TGTGACGCCA	CACACACACA	AAAAGAAAAA	CCTTTAAAAA	TTATACCTGT	TGCTTAATTA	5460
CAATATTCT	GATAACCATA	GAGTAGGACA	AGGGAAAAAA	TTTAAAAAAA	AAAAAAAAAA	5520
AAGAAAAAAC	ACATCTGTCT	GCTGGTCACT	TCTTCAATCC	AAGCAGATCT	GTGATCTTC	5580
CTCGCGTCTT	TCAAAGACTT	CCCTGTGCTA	AGTGAAGGAA	GCTCCAGGCT	GCACCCAGGT	5640
TTTGTGCTTT	GTTTCTCCTC	TGTTGTGAAA	GGGGCCCCAA	GATTCTGGGT	ACAGGACAGT	5700
TCATTTCAAGC	ATGGGGTCAG	GAGACAAGAG	CACTCCCTTT	ACATGCTGAC	GTACAGAACT	5760
TAGTGGGAAT	AGCCTAGTCC	CCACCTCTAG	GGATGGGGAG	CTAGCATGCA	TGGGGGTGAC	5820
CCAACCTCCCT	CCACCTTCTC	CTGGCCAGGA	AGAGCCTGTG	TACAGTAAGT	CTGACAAGCT	5880
TTCCCCAGTT	AGCAGGGCTC	AGAGCATTAA	AAAACCTCC	AAACTTGCT	GAGTCTAGGG	5940

ACTAGAGAGA AGATAGAAGA TTTGGTCTAT CTCCAAGGTG TGTAAGCTGT ACCAGGTAGA	6000
ATGCCAGGGA CCCCAGAACCA ACATCCAACA GCCCAATGGG TCTCCTCCAG AAAGTAGTGA	6060
AGACTCCAGA AACATCCCTT TCTCTTCTCC CTGCTCCCAG GAGTAACTGC ATTTGCTTTT	6120
GTAATCCTTA ATGAGCATTA TCTGCTAAAA AAAAAAAATT AGCTGTAACA GTTCTTTTG	6180
CAAAAGGATC ATTCTTAAAT AATTAAAAAC ACCCCCCCCC CAAAAAAAAG TCCAGAACCT	6240
TGTTCTTCCA AAGCAGAGAG CATTATAATC AGGGCCAAAA TCTGTCCCAC ACCTCTACCC	6300
CATCTCCTCA TGATTGCTGC TTCTAAGGCC AGAATACAGC AAAGATATTT GTAGGCCCTT	6360
TGGGTGACTG GGCTACCCTT GGAGCTCTTG GAAGATGGGC TGGGAAAGCC TCTGAGACCC	6420
TATCCTAGGG CCTTGCTCTA GGGAGTAATC AGTATTAGTA GAGTGTACCA ACATTATTCC	6480
CCAGCCGGCA TGAGATGGGG GCAGAAGAAG CCAAAGGGTT GTCTCCACTG CTACTTACTT	6540
GGCCACTGAC AGGTAGGTGA CCATGTATGT CCATATGCAT GTTTTATGGC TGATGTGAGA	6600
TCAGCACCCA AGTTAGCTTC ACCTGGTGAC CTCTAACCCCT GCCTGGATGG AGCAGGCCAC	6660
CTGGTTCAAT GTTTCTGGGC AGCTGGACAA TGGAGTGCAA AAGGCTTACA GAACTTGAAG	6720
CCTTTCCCTT ACTTTGCTAG CACGGCCTCC TTTTCCATTG GATTGTCAC TGCTTCAGTC	6780
AATAACAGCC GCTCCAGAGT CAGTAGTTGA TGAATATATG ACCAAATATC ACCAGGACTG	6840
TTACTCAACG TGTGCCGAGC CCTTTCCCTG TGCTGGGCTC CCTGTGTACC TGGACACTGT	6900
AATGTGTGCT GTGTTTGCTC TCCTTCCTCT TCCTTCCTTG CCCTTCCTT GTCTTCTGG	6960
GGTTTTCTG TTGGGTTTGG TTTGGTTTTA TTTTCCTTT TGTGTTCCAA ACATGAGGTT	7020
TTCTCTACTG GTCCTCTTTA ACTGTGGTGT TGAGGCTCT ATTGTGTAA TTTTGTTGG	7080
GTGAAAGGAA CTTGCTAAG TAAATCTCTT CTGTGTTGA AATGAAGTCT GTATTGTAAC	7140
TATGTTAAA GTAATTGTTA CAGAGACAAA TGCTCTAGG TACATTTCA TTACAAACAA	7200
AGCATTGAA GGGAGGGAAG TGGTGAATAA GACAAGAGGG GCAATCTGAA TTGATCCCTG	7260
CCCAGATCAG CCAGAAGCTA CCAAAAGTTA AGCACTGGTT TTCCATTCCA AGTCAAGAGA	7320
CTGAAGCTGA TGTTTGCCA TTTCAAAGT CAAAGCAAAA CCAGCTTTTC CACCCAATGG	7380
ATTCTTGCT TCTCCTTCCC AGATTATTAC TACTGCTGTA ATAATCTAGG AGTGCCAGGA	7440
GGGAAAGGAG TATTAACACA GAGCTGTGCT CACTGAGTAT GGAAAGGCTT GGTCTGAGTT	7500
TTCAGGAGGA TGACCCACTG TGGACATGGG GAGAAGACAG AAGATAAATT AGCCGCTCCC	7560
TGCCTAAGAT ACCTCTTAAT AGATAAGTCA AGGCCATGGA CATTATTGTC TACAAGGCAT	7620
GTTCAAAGA CATGACCACTG CAGGACACTT CTGTCATACT CCATGTTGCC CCCTAGTACA	7680
CAGTACTAAT CTGATATCTC TGTTCCCGCC ATGCCTGGGG GATAAAATGA TAGCAGAGAC	7740
TCCTTCCTT CAATGTGATC TAATTCCAA CAAAATCTGG GCCTGAGATA CCACCTGTTT	7800
CTATGGCAAA CATCCTCAGT AAAGTGTAT TCTCATTGCA GATTGTTCCA GCCTAATGTA	7860
AGAGGAACAG ACCAGTGTTC CCTTGGAGCC TCATGTGGAC AGTTCTACCT GTAGTGACCA	7920
GTTGGCTATA GTAGTTATTA GCTGGAACAA CCAGACAGGG TACATGCCCT CTCCAAAATC	7980

CATGTTGTAC TCCCCTCTGC CAGCCAGGGG GGGTGAGATC TGTAGAATAG TGCAGCCAGT	8040
GACAAGCCAC CTTGTGTTTG TCACCAGCTC AAAAACTCAT CTAAGGTTGG GAGCAGGCAG	8100
ACAAGGCAGA GAGAAAGATC CAGGACAGAC CTAGCTGGC TGGAGGGTC TTGAAAAGCC	8160
CTCTGTCGTA TTCACCTTCA GTTTTGTGC TTTGGGACAA TTACTTTAGA AAATAAGTAG	8220
GTCGTTTAA AAACAAAATA TTGATTGCTT TTTGTAGTG TTCAAAACAA AAGGTTCTTT	8280
GTGTATAGCC AAATGACTGA AAGCACTGAT ATATTTAAAA ACAAAAGGCA ATTTATTAAG	8340
GAAATTTGTA CCATTTCACT AAACCTGTCT GAATGTACCT GTATACGTTT CAAAAACACA	8400
CCCCACTGAA CCCCTGTAAC CTATTTATTA TATAAAGAGT TTGCCTTATA AATTTACATA	8460
AAAAA	8464

(2) INDICATIONS AS TO ID NO: 3:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 803 base pairs
 - (B) KIND: nucleotide
 - (C) STRAND FORM: not known
 - (D) TOPOLOGY: not known

- (ii) KIND OF MOLECULE: cDNA

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

TTGCTGCAGA TACTACTGAC CAGACAAGCT GTTGACCAGG CACCCCCCA ATACTCCCC	60
AATGTGCTCA TTAGAGATAG CAGTTGAGAG GACACTCCCA TTTTTGGTGC CCTGTCCATA	120
GCTTCCCTGA CTCTTCCACC ACCCCAACCTC CCAATCTGAG GGACCGGGAG GTGCGAGGCA	180
GGAAAAATAT TGGATTCTTT AGAGAAGACT AGAGGTGACC AGTGAUTGTG GCCCAGTAAT	240
TAGAACTGTG GTGGCACAAAG TCTGGCCCCA CATCCACCCCA ATCCAAAATC GATAAGGATA	300
TTTTGAAAAA CAGGAAAGCA GTACCTGTCT GATCCAGCTC TGGTATAGGT AGGAGTGAGT	360
CCTGAACCTGC TGGATTACAG ACTGGCTTGA GCCACAGAAC ATGATGGACC AGAGTAAAGT	420
ATCATCACCT GCTCACAAAGG CATGCTTCAC TAGAGAATAA TTCTAAAGAG GTGCCATGGA	480
GGCAGCAGGA CAAGGCACAA GCAGTCTGGG TGGGGTCAA GCCAGACCTA GTGCCACAGA	540
ACAAGAGAGC AATCTGTGAC TAGTAGTTAG GGACTTTGTG GATGGACAA GGGGCATGGG	600
GGAAGAAATG AAAATATTCT TCCAATTACT TTCCAGTTCT CCTTTAGGGA CAGCTTAGAA	660
TTATTTGCAC TATTGAGTCT TCATGTTCCC ACTTAAAAC AAACAGATGC TCTGAAAGCA	720
AACTGGCTTG AAATGGTGAC ACTTTGTCCC ACAAGCCACC AAATGTGGCA GTGTTAGAA	780
CTACCTGGAT CTGTATATAC CTG	803

(2) INDICATIONS AS TO ID NO: 4:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 790 base pairs
 - (B) KIND: nucleotide
 - (C) STRAND FORM: not known
 - (D) TOPOLOGY: not known

(ii) KIND OF MOLECULE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

TTGCTGCATA TACTACTGAC CAGACAAGCT GTTTATCAGG CTTTTAGGG TACACCAGCA	60
CCTGCCCTCC ATTTCATCCCT GTTGGGAGAG GGATGGTGTCA CTGGTGTCA CTAGAGACCT	120
AACAGAGTAG GGTTAGTGGG AGCTTACATT TTCAGTGCCA TTAACATTCT AGTCCAAGGT	180
CTTAAATTAT TATGTTGAGG GGTTTTTTT CCCCTGAGGG GGCGGGGGG TGGGGGGAGG	240
GTTGATTAGA TTCCCTTAGGA AAGAGGGTTG AGACAGACAG CAGAGCACTG AGCAGTTGGC	300
ACTAAAGGAG ACCTTGACTA GGGGCCAGGT GGCATCATCT AATCCAAGG GGCTCCAAGT	360
GAGTATTAGG GTGGGGGAAG ACATTATAGA AGGAATAGAA ACAGGATAGC TCAGCCTAAA	420
GAAGAGCGGT TAAAACCCTA CCCACCAGGA GTTGACTTGA AAGAGGCCCC TATGGAGGAA	480
TCCCCAACCA CCAAAAGCAA TCTTGAGCTG CAGCTGCTTC ATTTAGTGGA CCTTGTTAT	540
ATCTGGGTGT GTATGCACAT AGATAGACAG TGAGAAAGAA AACTGTTCTT CCAGTTCTT	600
TCCAGTGCTA CTAGCTTAGG GACAGGTTAG AACTGTCTGC ACAATTGTGT GATCATTCCC	660
ATTCCCCACTT CAAAACAAAC TGACTGAGAT GTTCAACAGA AAACTGGCTT CAATGGGTAA	720
CATGCCCTTG CCACTTACTT AAGACACTGG TGTGATGGGG TTTTGAACTC CCTATATTG	780
TAGGTATCTG	790

(2) INDICATIONS AS TO ID NO: 5:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 841 base pairs
 - (B) KIND: nucleotide
 - (C) STRAND FORM: not known
 - (D) TOPOLOGY: not known

(ii) KIND OF MOLECULE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:

TTGCTGCAGA TACTACTGAC CAGACAAGCT GTTGACCAGG CACCTCCCCC CCCGCCAAA	60
CCTTTCCCCC ATGTGGTCGT TAGAGACAGA GCAGTTGAGA GGACACTCCC GTTTTCGGTG	120
CCATCAGTGC CCCGTCTACC ACTCCCCCAG CTCCCCCCAC CTCCCCCACT CCCAACACG	180
TTGGGACAGG GAGGTGTGAG GCAGGGAGAGA CAGTTGGATT CTTTAGAGAT GGATGTGACC	240

AGTGGCTATG	GCCCCGTGCGA	TCCCACCCGT	GGCGGCTCAA	ATCTGGCCCC	ACCCCAGGCC	300
CAATCCAAAA	CTGGCAAGGA	CGCTTCACAG	GACAGGAAAG	TGGCACCTGT	CTGTTCCGGC	360
ATGGCTAGGA	GGGAGTTGTC	CCTTGAACTA	CTGGGTGTAG	ACTGGCCTAA	ATCACAGGAG	420
AGGATGGCCC	AGGGTGAGGT	GGCATGGTCC	ATTCTCAAGG	GACGTCCCTCC	AGTTGGTGGC	480
ACTAGAGAGG	CCATGGAGGC	AGTAGGACAA	GGCACAGGCA	GGCTGGCCA	GGTCAGGCC	540
GGGCCGAACA	CAGCGGGGTG	AGAGGGATTG	CTCGTCTCAG	AGCAGTCTGT	GACCGGTAGT	600
TAGGGACTTA	GTGGACAGGG	AAGGGGCAAA	GGGGGAGGAG	AAGAAAATGT	TCTTCCAGTT	660
ACTTTCCAAT	TCTACTCCTT	TAGGGACAGC	TTAGAATTAT	TTGCACTATT	GAGTCTTCAT	720
GTTCCCACCT	CAAACAAAC	AGATGCTCTG	AGAGCAAAC	GGCTTGAATT	GGTGACGTTT	780
AGTCCCTCAG	GCCACCAGAT	GTGATGGTGT	TGAGAACTAC	CTGGATATGT	ATATATAACCT	840
G						841

(2) INDICATIONS AS TO ID NO: 6:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 846 base pairs
 - (B) KIND: nucleotide
 - (C) STRAND FORM: not known
 - (D) TOPOLOGY: not known
- (ii) KIND OF MOLECULE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:

TTGCTGCAGA	TACTACTGAC	CAGACAAGCT	GTGACCAGG	CACCTCCCT	CCCGCCAAA	60
CCTTTCCCCC	ATGTGGTCGT	TAGAGACAGA	GCAGTTGAGA	GGACACTCCC	TTTTCGGTG	120
CCATCAGTGC	CCCGTCTGCA	GCTCCCCAG	CTCCCCCAG	CTCCCCCACT	CCCAACCACG	180
TTGGGACAGG	GAGGTGTGAG	GCAGGAGAGA	CAGTTGGATT	CTTTGAGAA	GATGGATATG	240
ACCAGTGGCC	ATGCCCTGTG	CGATCCCACC	CGTGGCGGCT	CAAGTCTGGC	CCCACACCAG	300
CCCCAATCCA	AAACTGGCAA	GGACGCTTCA	CAGGACAGGA	AAGTGGCACC	TGTCTGCTCC	360
AGCTCTGGCA	TGGCTAGGAG	GGAGTCGTCC	CTTGAACATAC	TGGGTGTAGA	CTGGCCTGAA	420
CCACAGGAGA	GGATGGCCA	GGGTGAGGTG	GCATGGTCCA	TTCTCAAGGG	ACGTCCCTCCA	480
ACGGGTGGCG	CTAGAAAGGC	CATGGAGGCA	GTAGGACAAG	GCGCAGGCAG	GCTGGCCCGG	540
GGTCAGGCCG	GGCAGGGCAC	AGCGGGGTGA	GAGGGATTCC	TAATCACTCA	GAGCAGTGTG	600
TGACTGGTAG	TTAGGGACTC	AGTGGACAGG	GGAGGGGCGA	GGGGGCAGGA	GAAGAAAATG	660
TTCTTCCAGT	TACTTTCCAA	TTCTCCTTAA	GGGACAGCTT	AGAATTATTT	GCACTATTGA	720
GTCTTCATGT	TCCCACCTCA	AAACAAACGA	TGCTCTGAGA	GCAAACCTGGC	TTGAATTGGT	780
GACATTTAGT	CCCTCAAGCC	ACCAGATGTG	AGTGTGAGA	ACTACCTGGA	TTTGTATATA	840

TACCTG

846

(2) INDICATIONS AS TO ID NO: 7:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 813 base pairs
 (B) KIND: nucleotide
 (C) STRAND FORM: not known
 (D) TOPOLOGY: not known

(ii) KIND OF MOLECULE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:

TTGCTGCAGA TACTACTGAC CAGACAAGCT GTTGACCAGG CACTCCCCAC AACAAACAACC	60
CCCTCCCTCC TCACCCCCACC CCTATCCCCCT GTGTGCTCAT TAGAGAGGGC AATTGAGAGG	120
ACACTCCCAC TTTTGGTGCC ACTGATGCCCG TGTCATAGC TTCCCTGACT TTTACACCAC	180
CCCAACTCCC AATCTGAGGG ACTGGGAGGT GTGACGCAGG AGAAACTATA TAGGACTCTT	240
GGGAGAACAG TATAGAGTTG GCAAGTGATT GCGCCCCAGT AATTCCAAC GTGGTAGCAC	300
AAGTCTGGCT CCACACCAAC CCAATCCAAA ACTGACAAAGG ACATTTGCA AAAATGAAA	360
GTGGCATTG TCTGATCCAG CTCTGGCATG GCTAGAGATG AGTCTTAAAC TGTGGCTTA	420
TAAACTGGCC TGAGCAACAG AAGAGGATGG CCCAGAGTAA AGTGTCACTA TCTGTTCACCA	480
AGGCATGCTC CCCTAGAAGT TCATGCTAAA GAAGTGCAT GGAGGCAGCA GGACAAAGTA	540
CAGGCTAGGT GGAGTCAAGC CAGGCCTAGT GCCACAGAGC AAGAGAGCAG TCTCTGACTA	600
GTAGTTAAGG GGGAGAACAG AAAATATTTC TTCCAATTGC TTTCCAGTTC TCCTTTAGGG	660
ACAGCTTAGA ATTATTTGCA CTATTGAGTC TTCATGTTCC CACTTCAAAA CAAATAGATG	720
CTCTGAAAGC AAACCTGGCTT GAAATGGTGA CACTGTCCCA CAAGCCACCA GACAATGGCA	780
GTGTTCAGAA CTACCTGTAT ATGTATATAC CTG	813

(2) INDICATIONS AS TO ID NO: 8:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 842 base pairs
 (B) KIND: nucleotide
 (C) STRAND FORM: not known
 (D) TOPOLOGY: not known

(ii) KIND OF MOLECULE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:

TTGCTGCAGA TACTACTGAC CAGACAAGCT GTTGACCAGG CACCTCCCCCT CCCGCCAAA	60
CCTTTCCCCC ATGTGGTCGT TAGAGACAGA GCGACAGAGC AGTTGAGAGG ACACCTCCGT	120

TTTCGGTGCC	ATCAGTGC	CCC	TACAGC	TCCCCCAGCT	CCCCCCCACCT	CCCCCACTCC	180
CAACCACGTT	GGGACAGGGA	GGTGTGAGGC	AGGAGAGACA	GTTGGATTCT	TTAGAGAAGA		240
TGGATATGAC	CAGTGGCTAT	GGCCTGTGTG	ATCCCACCCG	TGGTGGCTCA	AGTCTGGCCC		300
CACACCAGCC	CCAATCCAAA	ACTGGCAAGG	ACGCTTCACA	GGACAGGAAA	GTGGCACCTG		360
TCTGCTCCAG	CTCTGGCATG	GCTAGGAGGG	GGGAGTCCCT	TGAAC	ACTACTG	GGTGTAGACT	420
GGCCTGAACC	ACAGGAGAGG	ATGGCCCAGG	GTGAGGTGGC	GTGGTCCATT	CTCAAGGGAC		480
GTCCTCCAAC	GGGTGGCGCT	AGAGGCCATG	GAGGCAGTAG	GACAAGGCGC	AGGCAGGCTG		540
GCCCCGGGTC	AGGCCGGGCA	GAGCACAGCG	GGGTGAGAGG	GATTCTTAAT	CACTCAGAGC		600
AGTCTGTGAC	TTAGTGGACA	GGGGAGGGGG	CAAAGGGGG	GGAGAAGAAA	ATGTTCTTCC		660
AGTTACTTTC	CAATTCTCCT	TTAGGGACAG	CTTAGAATT	TTTGC	ACTAT	TGAGTCTTCA	720
TGTTCCCACT	TCAAAACAAA	CAGATGCTCT	GAGAGCAAAC	TGGCTTGAAT	TGGT	GACATT	780
TAGTCCCTCA	AGCCACCAGA	TGTGACAGTG	TTGAGAACTA	CCTGGATT	TATATATA	CC	840
TG							842